

E-LEAVE MANAGEMENT SYSTEM AND
PAYROLL (E-LMSP)

CHUA MENG FEI

BACHELOR OF COMPUTER SCIENCE
(COMPUTER SYSTEMS & NETWORKING)

UNIVERSITI MALAYSIA PAHANG



SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor of Computer Science (Computer Systems and Networking).

(Supervisor's Signature)

Full Name : DR.ZURIANI BINTI MUSTAFFA

Position :

Date :



STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at University Malaysia Pahang or any other institutions.

(Student's Signature)

Full Name : CHUA MENG FEI

ID Number : CA15134

Date :

E-LEAVE MANEGMENT SYSTEM AND
PAYROLL (E-LSMP)

CHUA MENG FEI

Thesis submitted in fulfillment of the requirements
for the award of the degree of
Bachelor of Computer Science (Computer Systems and Network)

Faculty of Computer Systems & Software Engineering
UNIVERSITI MALAYSIA PAHANG

DECEMBER 2018

ACKNOWLEDGEMENT

First of all, I would like to thank everyone who had contributed to successful the completion of this project. The special thank is my supervisor, Dr. Zuriani Binti Mustaffa whose encouragement, guidance and support from the initial to the final level that make me easily to understanding of the project. The supervision and support that he gave truly help the progression and smoothness of the project. The co-operative is much indeed appreciated.

Besides that, I also want thank to all my friends who helping me directly and indirectly in preparing this report. Last and not least, I also want to thank my family that always inspired, encouraged and fully supported me to finish my project.

ABSTRAK

Sistem Pengurusan E-Leave and Payroll (E-LMSP) adalah aplikasi berasaskan web dan mudah alih aplikasi yang boleh digunakan untuk semua organisasi atau syarikat yang memudahkan pengurusan pekerja. Ini disebabkan masalah dalam menggunakan sistem manual yang boleh menyebabkan kerosakan, hilang dan boleh juga mahal. Di samping itu, ia juga akan menyebabkan kelewatan permintaan cuti apabila pegawai berkenaan tidak berada di pejabat. Untuk menyelesaikan masalah yang ditangguhkan, sistem ini menyediakan proses pengurusan cuti mudah automatik seperti maklumat pekerja, kelulusan cuti, jenis cuti, baki cuti, pembayaran, pemberitahuan e-mel, penjana laporan adalah unsur sistem ini. Sistem ini reka bentuk dalam antara muka pengguna yang mudah dan mesra untuk memudahkan pengguna untuk menggunakannya. Setiap pekerja diberikan nama pengguna yang unik, kata laluan dan boleh diakses sama ada oleh pekerja atau admin untuk log masuk ke sistem. Selain itu, fungsi pentadbir untuk sistem ini adalah untuk mendaftarkan pekerja baru, memadamkan dan mengemas kini maklumat pengguna dalam pangkalan data. Pentadbir dikenali sebagai pihak berkuasa yang lebih tinggi yang menggunakan untuk menguruskan cuti sama ada mahu meluluskan atau menolak cuti pekerja. Sistem ini juga menyediakan fungsi yang membantu pentadbir untuk mengira gaji secara automatic bagi setiap pekerja berdasarkan permintaan cuti oleh pekerja. Sistem ini dibangunkan dengan menggunakan kaedah air terjun(Waterfall) untuk memastikan ia digunakan dalam masa yang ditetapkan. Sebagai kesimpulan, sistem ini sangat berguna untuk mana-mana syarikat atau organisasi di mana terdapat ramai pekerja dan lebih mudah untuk mengesan dan mengurus cuti pekerja.

ABSTRACT

E-Leave Management System and Payroll (E-LMSP) project is a web application and mobile application which can be used for all the organization or company that will ease the employees leave management. This is due to the problem in using manual system which can cause damage, missing and can be costly as well. In addition, it also will cause delay in leave request when the respective officer not in the office. To solve leave delayed problem, this system provided with the automated function ease leave management process such as information of employees, approval of leave, types of leave, leave balances, payment, notification of email, report generation are element of this system. The system is design in such a simple and friendly user interface to ease the users to use. Every employee is provided with unique username, password and accessible either by an employee or admin for log into a system. Moreover, the functions of administrator for this system are to register the new employee, delete and update information of user in a database. Administrator is known as higher authorities that use to manage the leave whether want to approve or reject the leave of employees. This system also provides the function that help the administrator to auto calculate the salary for each employee based on leave request by employees. This system is developed by using Waterfall method to ensure it is deployed in the prescribed time. As a conclusion, this system is very useful for any companies or organization where there are have large number of employee and easier to track and manage employees leave.

TABLE OF CONTENT

DECLARATION OF THESIS AND COPYRIGHT

SUPERVISOR’S DECLARATION

STUDENT’S DECLARATION

TITLE PAGE

ACKNOWLEDGEMENTS i

ABSTRAK ii

ABSTRACT iii

TABLE OF CONTENT iv

LIST OF TABLES vii

LIST OF FIGURES viii

LIST OF ABBREVIATIONS x

CHAPTER 1 INTRODUCTION 1

1.1 Introduction 1

1.2 Problem Statement 2

1.3 Objective 4

1.4 Scope 4

1.5 Significant 5

1.6 Report Organization 5

CHAPTER 2 LITERITURE REVIEW 6

2.1 Introduction 6

2.2 Overview

2.1.1	Absentee Management System(AMS)	6
2.1.2	Human Resource Management System(HRMS)	8
2.1.3	Payroll Management System(PMS)	9
2.2	Summary Comparison of the Existing Systems	10
2.3	Conclusion	12
CHAPTER 3 METHODOLOGY		13
3.1	Introduction	13
3.2	Methodology	13
3.2.1	Planning Phase	15
3.2.2	Analysis Phase	15
3.2.3	Designing Phase	15
3.2.4	Construction Phase	16
3.2.5	Testing Phase	16
3.2.6	Deployment Phase	16
3.3	System Design	17
3.3.1	Context Diagram	17
3.3.2	Use Case Diagram	17
3.3.3	Flow Chart	19
3.3.4	Dialogue Diagram	20
3.4	Software Requirement and Specification (SRS)	23
3.5	Software Design Document (SDD)	23
3.6	Software and Hardware Requirement	23
3.7	Gantt Chart	24
3.8	Implementation	25

3.9	Testing	26
CHAPTER 4 IMPLEMENTATION, TESTING AND RESULT DISCUSSION		27
4.1	Introduction	27
4.2	Implementation	27
4.2.1	Development Environment	28
4.2.2	Strength of E-LMSP Application	43
4.2.3	Weakness of E-LMSP Application	43
4.2.4	Challenges Implementation of E-LMSP Application	43
4.3	Testing and Result Discussion	44
4.2.5	Integration Testing	44
4.2.6	Unit Testing	45
4.2.7	User Acceptance Test	65
4.2.8	System Testing	65
4.3	User Manual	66
CHAPTER 5 CONCLUSION		67
5.1	Introduction	67
5.2	Project Constraints	68
5.3	Feature Work	69
REFERENCES		70
APPENDIX A GANTT CHART		71
APPENDIX B SOFTWARE REQUIREMENT SPECIFICATION		73
APPENDIX C SOFTWARE DESIGN DOCUMENT		74
APPENDIX D USER ACCEPTANCE TEST		75
APPENDIX E USER MANUAL		76

LIST OF TABLES

Table 2.1	Comparison between three existing system with proposed systems	11
Table 3.1	Software used for development and their description	23
Table 3.2	Hardware used for development and their description	24
Table 3.3	Testing function of register	26
Table 4.1	Unit Testing for login	45
Table 4.2	Unit testing for registration	46
Table 4.3	Unit testing for update information	48
Table 4.4	Unit testing for apply leave	51
Table 4.5	Unit testing for manage leave	54
Table 4.6	Unit testing for calculate total payment/salary	55
Table 4.7	Unit testing for generate report/slip	60
Table 4.8	Unit testing for view leave status	63
Table 4.9	Unit testing for delete	63

LIST OF FIGURES

Figure 2.1	Absentee Management System(AMS)	6
Figure 2.2	Human Resources Management System(HRMS)	8
Figure 2.3	Payroll Management System(PMS)	9
Figure 3.1	Waterfall Model	14
Figure 3.2	Context Diagram of E-LMSP application	17
Figure 3.3	Use Case Diagram of E-LMSP application	18
Figure 3.4	The flow chart of overall E-LMSP application	19
Figure 3.5	Dialogue Diagram of E-LMSP application (Staff)	21
Figure 3.6	Dialogue Diagram of E-LMSP application (Admin)	22
Figure 4.1	Microsoft SQL Server	28
Figure 4.2	Microsoft Visual Studio	29
Figure 4.3	Login page of E-LMSP web application	29
Figure 4.4	Coding for Login Page of E-LMSP web application	30
Figure 4.5	Apply Leave of E-LMSP web application	30
Figure 4.6	Coding for Apply Leave of E-LMSP web application	31
Figure 4.7	View Salary of E-LMSP web application	31
Figure 4.8	Coding for View Salary of E-LMSP web application	32
Figure 4.9	View Leave Status of E-LMSP web application	32
Figure 4.10	Coding for View Leave Status of E-LMSP web application	33
Figure 4.11	New Registration of E-LMSP web application	33
Figure 4.12	Coding for New Registration of E-LMSP web application	34
Figure 4.13	Update Information of E-LMSP web application	34
Figure 4.14	Coding for Update Information of E-LMSP web application	35
Figure 4.15	Manage Leave of E-LMSP web application	35
Figure 4.16	Coding for Manage Leave of E-LMSP web application	36
Figure 4.17	Payroll of E-LMSP web application	36
Figure 4.18	Coding for Payroll of E-LMSP web application	37
Figure 4.19	Android Studio	37
Figure 4.20	Login Page of E-LMSP mobile application	38
Figure 4.21	Coding for Login Page of E-LMSP mobile application	38
Figure 4.22	Apply Leave of E-LMSP mobile application	39

Figure 4.23	Coding for Apply Leave of E-LMSP mobile application	39
Figure 4.24	View Leave Status of E-LMSP mobile application	40
Figure 4.25	Coding for View Leave Status of E-LMSP mobile application	40
Figure 4.26	View Salary of E-LMSP mobile application	41
Figure 4.27	Coding for View Salary of E-LMSP mobile application	41
Figure 4.28	Manage Leave of E-LMSP mobile application	42
Figure 4.29	Coding for Manage Leave of E-LMSP mobile application	42

LIST OF ABBREVIATIONS

E-LMSP	E-Leave Management System and Payroll
AMS	Absentee Management System
HRMS	Human Resources Management System
PMS	Payroll Management System
GB	Gigabyte
SRS	Software Requirement Specification
SDD	Software Design Document
UAT	User Acceptance Test

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Seri Barat Mixed is a company that was developed in 1983 with its major source of revenue continues to be derived from construction sector with premix production and Quarry. Seri Barat Mixed has factories which are located at Pulau Condong, Tanah Merah and Gua Musang with around 50 staff that needs to be managed.

Currently, the company uses the manual method for leaves application. The employees who want to apply their leave need to follow some procedures. The first procedure is the employee need to submit the leave application form at least 3 days earlier. The second procedure is the employee needs to get a sign or approval from official manager or administrator. The third procedure is the approval leave form need to be submitted to administrator for their record (Miss.Tan, 2015)

By using the manual method, , it raises some problems for the company where it is difficult to manage the leave for each employee due to they need to follow many procedures to apply their leaves and this will take a longer times and difficult to get faster approval leaves if the staff is having an emergency. The problems also could be happen even the approving officer is not available. This will cause the leaves applied will be delayed. This process is not efficient especially when employees have an emergency. Another problems are by using the paper-based system, the record can be damaged or lost and need content supply for inks, papers and files (Datin.Ginny., 2015) Besides that, the administrator will also face some problems which every month before

given the salary for each employee he/she needs to manually calculate the salary based on leaves that applied by employees, especially for the employee who applied an extra leave where their salary will be deducted based on the number of extra leave applied (Miss.Owi, 2015 & Datin.Ginny.,2015)

With respect to the matter, this project proposes an E-Leave Management system and Payroll (E-LMSP) which will be used by employees and administrative which will make the leave application at ease. This system is designed to be used by employees to apply their leaves and help administrative to auto update salary for each employee easily.

Therefore, E-LMSP is a web based and mobile application that makes employees easy to access the systems. This system is an automated system for managing leaves which able to provide leave information of every employee which consists of leave balance, approval of leave, leave cancellation, date of leave application and so on. In this systems, it also provides some features that will auto update salary based on employees apply their leaves, store the employee details into database, view and generate the leave report, apply leave anytime anywhere and so on.

Moreover, to provide a better leave management system of large employee, this leave online system is proposed to handle repetitive and complicated process efficiently. The E-LMSP application will make the leave application become easier to apply without having to filling up their information because the all information will retrieve from the database. This system will able to provide an efficient process the information. Furthermore, this system can reduces the mistake done by human, saving the time and man power, save cost and so on.

1.2 PROBLEM STATEMENT

Currency, Seri Barat Mixed uses manual system for managing leave application. The using of paper-based system can cause missing, damage and need supply cost to buy the papers, files, inks, and storage drawers to keeps leave application form. Moreover, every month when the company is about to give salary for employees, the administrator need to manually calculate the salary based on leave applied by the

employees. Manually calculation of the salary is time consuming and sometimes can lead to some mistakes in calculation of salary. This may cause delay in salary payment (Datin.Ginny., 2015) Therefore, with the proposed E-Leave Management systems and Payroll (E-LMSP) application, it will provide an auto-update salary function when employees take an extra leave without the need of the administrator to manually check and calculate the leave application applied by employees each times.

The use of paper-based system will cause the employees difficult to applied leaves because it needs follow a lot of procedures of the organizations. This will cause the need a lot of man power and time to apply leave which they need to fill up the leaves form at least 3 days earlier and must get a sign or approved by the approving officer and the leave approval will be delayed if approving officer is not in office. Other than that, the employee also does not know the current balance of leave (Datin.Ginny., 2015 & Miss.Tan, 2015)

By using E-LMSP system, the employees does not need to wait to get a sign of the approving officer to approve their leave because this system will provide an email notification to the approving officer for further action. The proposed E-LMSP application does not require the applicant to fill up the information because the employees information are stored into database and can be retrieved easily, prevent the leave delay and it can help to reduces input error. This E-LMSP application will make more efficient and effective that employees no need to follow many procedures of organization which applied leave application for three days earlier, get a sign approval from official manager and submitted leave application form to administrator for their record and employees has a user friendly to use our systems.

The process of E-LMSP application will make easy for staff and administrator who provides information or queries about leave of every employee whether it may concerned on leave balances, leave types, approval of leave and cancelation of leave. This system will be able to provide the administrator an easy way to calculate salary for each employee based on leave applied without any mistake. Then, it can help the administrator do the less work, make employees easy to apply their leave without take a longer time, auto update the salary when the staff apply the leave, store all staff information, save time and cost of the organization.

REFERENCES

- Bridge Southeast Asia. (2016). What is a Payroll Management System. Retrieved October 8, 2017, from <http://blog.bridgesoutheast.com/what-is-a-payroll-management-system>
- Datin.Ginny. (2015). *The Manager of Seri Barat Mixed sdn bhd*. kelantan.
- Global, I. (2015). Challenges of Payroll. Retrieved October 7, 2017, from <https://www.invensis.net/blog/finance-and-accounting/challenges-payroll-processing/>
- Groups, T. & F. (2010). Challenges in Human Resource Development Practitioner Preparation. Retrieved October 13, 2017, from <http://www.tandfonline.com/doi/abs/10.1080/01580370120043231?journalCode=csc20>
- Miss.Owi. (2015). *The Human Resources of Seri Barat Mixed sdn bhd*. kelantan.
- Miss.Tan. (2015). *The Employess of Seri Barat Mixed sdn bhd*. kelantan.
- SoftAlternative.com. (2006). Absentee Management System. Retrieved October 8, 2017, from <http://www.softalternative.com/home-desktop/calendars-planners/downloads/absentee-management-system/753/>
- Technology, A., To, A., & Kuim, I. L. M. S. (2012). Faculty of Information and Communication Technology (MITU 5213) AGENT TECHNOLOGY APPROACH TO IMPROVE LEAVE MANAGEMENT SYSTEM, (Mitu 5213).
- Wikipedia. (2017). Human resource management system. Retrieved October 13, 2017, from https://en.wikipedia.org/wiki/Human_resource_management_system